

## **Plant and plan, care and grow. A hands-on exercise using the (inner) sustainable development goals to teach research methodology to final year sociology students**

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### ***Abstract***

*Etymologically, the word seminar comes from the Latin semen, which means “seed”. Inspired by such linguistic archeology this text describes an exercise developed with undergraduate sociology students, who were literally invited to sow a seed and observe its growth over the course of a semester in which they must design a sociological research project. Transversally, the students perceived the exercise of germinating a plant as a metaphor for the development of the research project as a living and dynamic reality, highlighting the beginning, growth and maturation as key moments. Additionally, students emphasized that observing the germination and development of the plant allowed them to critically reflect on the different stages of the research project, while allowing their own inner development, namely with regard to the dimensions of “being”, “thinking”, “relating”, “collaborating” and “driving change”.*

**Keywords:** *Inner development goals; social research methodology; sociology; sustainable development goals; SDG 4 - Quality Education.*

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## **1. Introduction**

Higher education is made of many teaching-learning contexts, including seminars. Etymologically, the word seminar comes from the Latin *semen*, which means “seed”. Inspired by such a linguistic archeology, a hands-on exercise was developed with higher education students, who were literally invited to sow a seed and observe its growth. The exercise was carried out with 37 undergraduate sociology students within the scope of the “Research Laboratory: Project Elaboration” (LabEP) course in the fall semester of the 2022/23 academic year. LabEP is a compulsory subject in the final year of the Sociology graduation at the University of Évora. The weekly workload is two theoretical hours and two practical hours, which is equivalent to a total of 6 ECTS, but classes often take the form of a seminar with strong participation by students. According to the study plan in force, the course aims to develop cognitive and reflective skills and its general objective is to serve as a scientific and pedagogical contextual framework for the construction of a sociological research project. The curricular unit is strongly articulated with “Research Laboratory: Project Execution” in the last semester. Both courses aim to support the construction and development of sociological research work and to complement the deepening of general skills, namely: ability to integrate theoretical, methodological, and empirical knowledge towards the identification and resolution of sociological problems; to develop rigorous and innovative analysis; clearly communicate analysis and results, as well as its foundations and justifications, in contexts of research and professional activity; and to stimulate autonomous personal learning processes. In line with the idea that higher education institutions play a key role in promoting sustainable development (SDSN General Assembly, 2017), this course intends to contribute to this, creatively using the sociological literature that recognizes the different ways of telling – and thinking – about society (Becker, 2007), and the power of the sociological imagination (Mills, 1959) to create new and more engaging ways of teaching and learning sociology (Atkinson and Lowney, 2016; Jones, 2017).

## **2. Context: Looking for deep learning experiences to foster (inner) sustainable development**

At present, educating for Sustainable Development Goals (SDGs) is a core objective for higher education institutions (SDSN General Assembly, 2017). The 2030 Agenda envisions a world transformation (United Nations, 2015), that is inseparable from starting at universities (UNESCO, 2017). This appeal comes in the wider context of the important changes that are taking place in teaching and learning environments, namely those that claim the importance of “deep learning” rather than “surface learning” experiences (Atherton, 2009). As the 17 SDGs become widely publicized and increasingly known around the world, the non-profit, open-source initiative “Inner Development Goals” (IDGs) gains visibility as “an essential framework of transformative skills for sustainable development” (Inner

Development Goals, 2023). The IDGs framework consists of five dimensions organising 23 skills and qualities of human growth and internal development. The five-dimensional framework comprises skills related to “Being — Relationship to Self”, “Thinking — Cognitive Skills”, “Relating — Caring for Others and the World”, “Collaborating — Social Skills” and “Acting — Driving change”. According to the initiative, IDGs aims to develop inner abilities to deal with increasingly complex environments and challenges arising from the implementation of SDGs (Inner Development Goals, 2023), thus accelerating the work towards the UN’s Global Goals.

### **3. Plant a seed to investigate the outside and grow from within**

#### ***3.1. Planting and planning***

At the beginning of the semester, students were invited to carry out the germination experiment of a plant and carefully observe its growth. To carry out the activity successfully, the teacher distributed to each student in the classroom two seeds of a dry leguminous plant (beans), a sheet of kitchen paper and a plastic bag with a zipper closure. Instructions were given in the classroom: (1) students should start by opening the bag to free up space; (2) moisten kitchen paper; (3) fold the kitchen paper up to three times the size of the beans; (4) place the wet kitchen paper in the bottom of the zip-lock bag; (5) place a bean on top of the paper and another bean on the side of the paper that is in contact with the bag; (6) tape the bag to a window that receives a lot of direct light and leave it for a few days; (7) observe the germination and care for the plant, later transplanting it to a pot with soil, water and sunlight. Figure 1 depicts the teacher's exercise, taped to her home office window. A similar project was developed by the students, captured in the form of a photograph and submitted online via Moodle in the course area. This photograph was accompanied by a short reflection text of up to 500 words in which students were invited to reflect on their own research project and its relationship with the SDGs and IDGs.

#### ***3.2. Observing and anticipating***

The activity instruction given to students in September, specifically asked them to carry out a plant germination experiment, carefully observe its growth, and reflect on the research project and its relationship to the SDGs and IDGs. Three months later, in December, students were invited to remember the exercise, to think about the different phases of anticipation, projection, growth, stagnation and eventual disappearance of the plant and to reflect critically on the elaboration of the research project as a result of academic investment and process of personal development throughout the semester.



Figure 1. Plant germination activity. Source: Photograph by RCosta (September 20, 2022).

Transversally, students perceived the exercise of germinating a plant as a metaphor for the development of the research project as a living reality. Specifically, moments of beginning, growth and maturation were highlighted in their narratives, as shown in the following excerpts taken from student's essays:

*“In my opinion, the bean is a metaphor for the project. Just as the bean takes time to sprout and, after that moment, it grows day by day, the project also takes time. It may take a while for us to decide what we want to do, the theme, the approach, the methods, the location, but once the first idea comes to us, whether on a sleepless night or a busy afternoon, I think the project will flow until it is fully prepared to be executed.”*

*“The seed germination process finds a metaphor related to the elaboration of the research project. By sowing and consistently tending a small seed, a life is created. As in the project, from a small idea, perhaps coming from a moment of inspiration, different ideas and hypotheses are developed that can generate the final project. With patience and consistency, the idea is fed, doing research and working on different hypotheses, which will bring the project to life.”*

*“[...] in a metaphorical tone, I can associate the germination phases of a plant with the fact that the elaboration of a project is also done in phases, because just as the plant is sown, cared for and develops over time and with the help of some external factors. The elaboration of a project starts from a question at the outset, and then, with time and dedication, it develops through several stages of investigation, until it reaches its result.”*



Figure 2. Plant germination. Source: Photograph by CFélix (October 7, 2022).



Figure 3. Plant after pot transplant. Source: Photograph by CCuco (October 21, 2022).



Figure 4. Plant in strong development phase. Source: Photograph by MVaz (October 18, 2022).

The metaphor that associates the germination of the plant with the elaboration of the research project gains strength as time progresses in the semester, since the course included the delivery of three reports in the form of a project in its preliminary, intermediate and final version. The photographs of the different stages of plant germination accompany this process of simultaneous growth and maturation (Figure 2, Figure 3 and Figure 4).

### **3.3. Caring and growing**

Often in their written essays students emphasized how the exercise required them to develop specific skills that, while helping to prepare the research project, ultimately have repercussions in terms of their own inner development, in particular with regard to relationship to self, cognitive skills, caring for others and the world, social skills and driving change. The following excerpts illustrate, consecutively, each of these dimensions.

*“[...] the experience of germinating a plant, it is related to the IDG's as it provides us with the opportunity to be present in a project, which obliges us to have an open presence, without judgments, awakening an basic mindset of curiosity, acting on a commitment of responsibility. When carrying out the project, we are under full responsibility for it, ensuring the commitment we have with it. In this investigation, trust is placed in us, the result of a mobilization of a group of people, in this case the class, to engage in purposes shared. A collaborative relationship, on the part of the teacher, in providing us with the necessary materials for its execution.”*

*“[...] [the project] fits within the competencies defended by the IDGs, due to the fact that both need planning, organization and insight to overcome the obstacles that arise. Both projects “require”, from the people responsible for their elaboration, a more critical type of thinking capable of developing our cognitive abilities, taking different perspectives, evaluating the information and, in a way, giving it meaning as an interconnected whole, also being capable of fostering genuine dialogue and constructively managing conflicts and adapting communication to different groups, transmitting an environment of trust. In short, both the aforementioned organizations and the research project push individuals to develop and deepen their relationship with their thoughts, feelings and body, helping them to be present, intentional and non-reactive when facing some kind of complexity.”*

*“When trying to put the beans in the bag with the damp kitchen towel and place them on the window, I felt that I would have to take responsibility for taking care of my research project in the same way as this germination, being necessary to be assertive (as in the case of the necessary water) and patience to wait for its growth.”*

*“Our growth is also dependent on the conditions that we have at our disposal throughout our lives, our abilities (to think, to act, to socialize, among others) being what we work to acquire and, ultimately, they are what define us as human beings. These capabilities are developed through our interaction with the world around us, whether through socialization, observation, among others. And like beans, sometimes it is necessary to change the environment in which we find ourselves so that we can progress in our personal development. The research project is also dependent on this, for its development it is necessary to carry out research and interactions, and the work invested by us is what is reflected in its final result.”*

*“Relating to the IDGs, this activity also allows us to reflect on how simple it is to generate life and how rewarding it is to accompany its growth and development. During this week I found myself checking over and over again the state of the little bean seed in the hope of seeing a sprout, of observing its development. It's very simple to leave for change, sometimes just a seed.”*

The reflexivity around the failure of a first germination appears as particularly heuristic to understand the power of the suggested metaphor to deal with error and frustration, but also with courage, creativity, optimism and perseverance. Through the voice of a student, the following excerpt shows such a connection remarkably.

*“The living things we care for eventually grow and “flourish” when properly cared for. Be it a plant, an animal, a baby, or even ourselves. We grow when we learn something new, when we improve our skills and abilities, and for that to happen, we need to take care of our brains and feed them with knowledge. Be there through reading, listening, socializing. We only grow when we care and feed our desire to do so. And at a certain point, this growth becomes invisible to the eyes, but it never goes unnoticed in our lives. Our abilities to be, to think, to relate, to collaborate and to act are always present in our lives and in our actions, projects, work, social relationships, and even in the relationship we maintain with ourselves. They are what define us as human beings and social beings, and we must never stop allowing ourselves to grow in what is our human essence. I planted a bean, placed it inside a very damp piece of paper and later in a closed plastic bag, then stuck the bag to my bedroom window and watched the bean every day. Unfortunately, I didn't see growth, but the appearance of mold. That's when I realized I had put in too much water, and it was too late to save it. Sometimes we want so much that something is not missing, that we end up exceeding the possible limits, and we end up suffocating the things we want to take care of so much. [...] In a second attempt, I put 3 little beans in a glass pot, on top of a damp cotton, and later I put the pot in the kitchen, near the window, where it will catch the sun throughout the day, and with the pot open, it will also catch air. We all make mistakes sometimes, and that's not why we should give up, because starting over is something that makes us grow and teaches us, if not the right path, at least what was the wrong path. So I realized that when we fail once, we can only try again, until it works, even if it takes us a long time. We have to let go of the idea that it's never too late to start over. Then I will look forward to the growth of my beans, and their “blossoming”, as well as I expect the same from myself every day, that it grows, and that it “blooms”.”*

#### **4. Conclusions**

This article explored the pedagogical value of using a plant germination experiment as a practical exercise in the teaching-learning process of a course aimed at undergraduate

students engaged in developing a sociological research project. Transversally, the students perceived such an exercise as a metaphor for the development of the research project as a living and dynamic reality, highlighting the beginning, growth and maturation as key moments. At the end of the semester, the students emphasized how the observation of the germination and development of the plant allowed them to critically reflect on the different stages of elaboration of the research project while allowing their own inner development, namely with regard to the dimensions of “being”, “thinking”, “relating”, “collaborating” and “driving change”. Interestingly in the students’ narratives, the reflexivity around failure is heuristic to understand the power of the suggested metaphor to deal with error and frustration, but also with courage, creativity, optimism and perseverance.

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